



# **National Weather Service Arkansas-Red Basin River Forecast Center**

## **Drought Briefing**

**10/24/2014**

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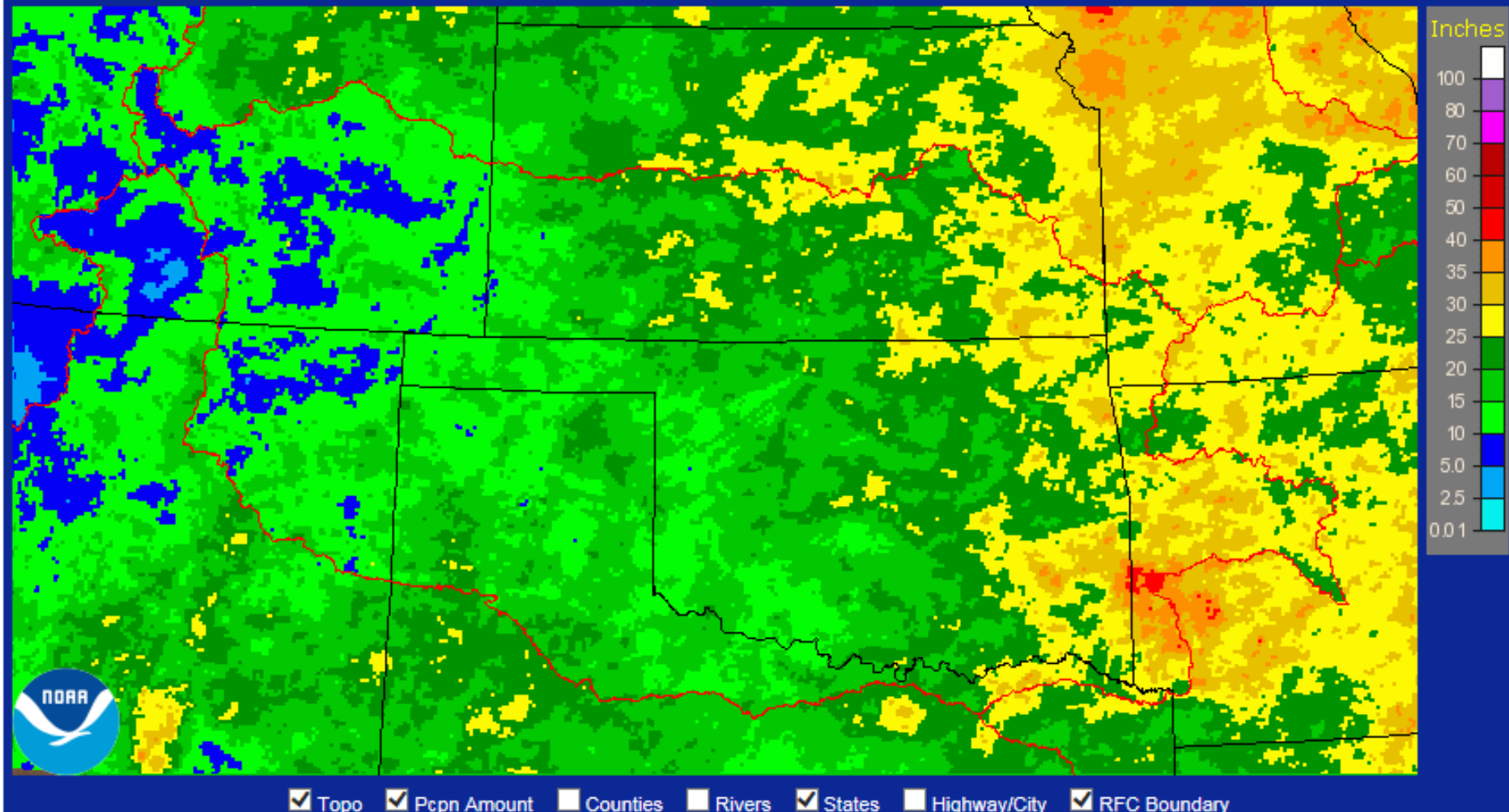


# Arkansas Red Basin River Forecast Center

## 180-Day Observed Precipitation



Arkansas-Red Basin RFC Tulsa, OK: Current 180-Day Observed Precipitation  
Valid at 10/21/2014 1200 UTC - Created 10/22/14 0:21 UTC



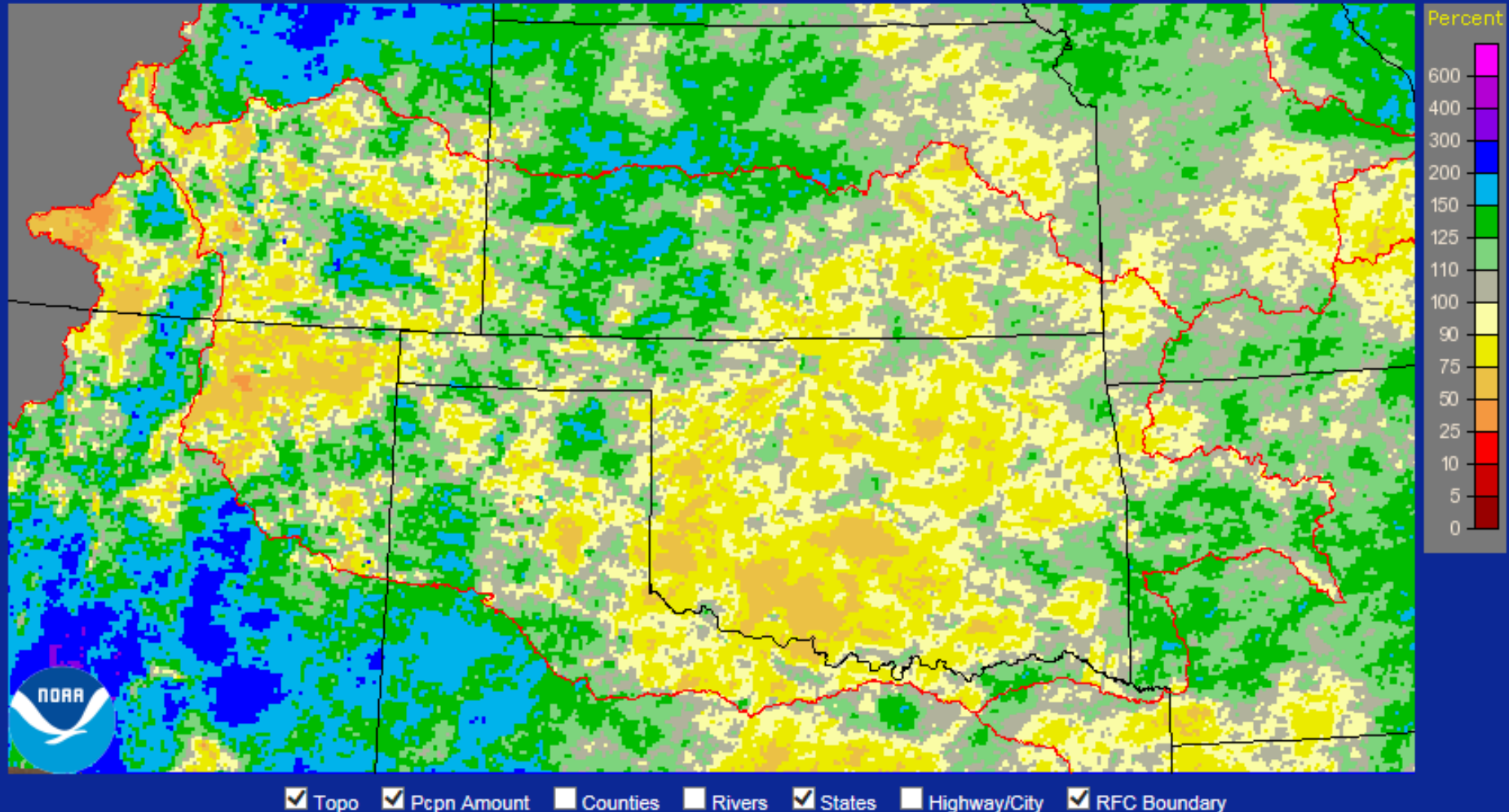


# Arkansas Red Basin River Forecast Center

## 180-Day Percent of Normal Precipitation



Arkansas-Red Basin RFC Tulsa, OK: Current 180-Day Percent of Normal Precipitation  
Valid at 10/22/2014 1200 UTC - Created 10/22/14 14:21 UTC





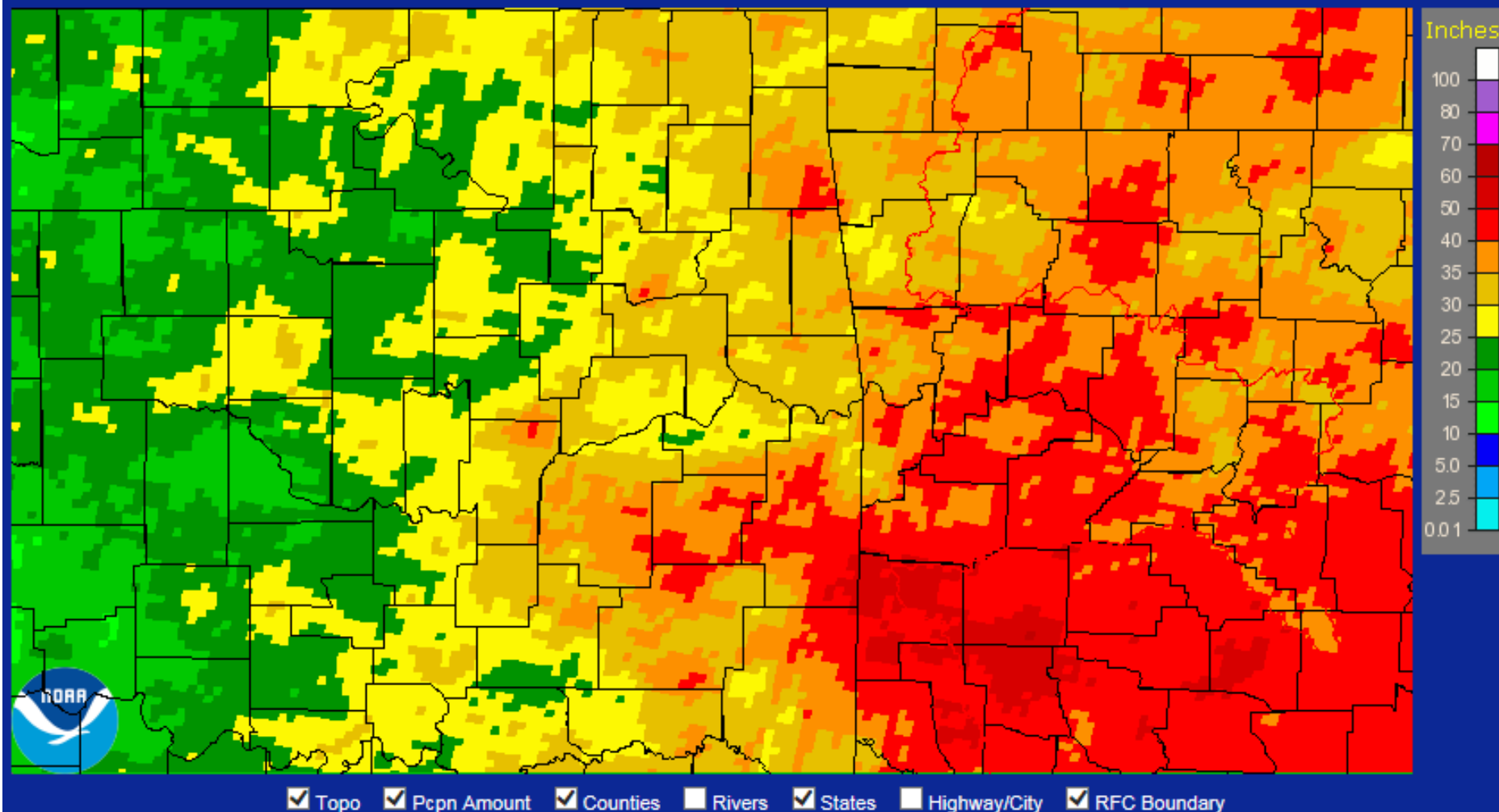
# Arkansas Red Basin River Forecast Center

## Year to Date Observed Precipitation

### As of 10/23/14



Tulsa, OK (TSA): Current Year to Date Observed Precipitation  
Valid at 10/23/2014 1200 UTC - Created 10/24/14 0:15 UTC



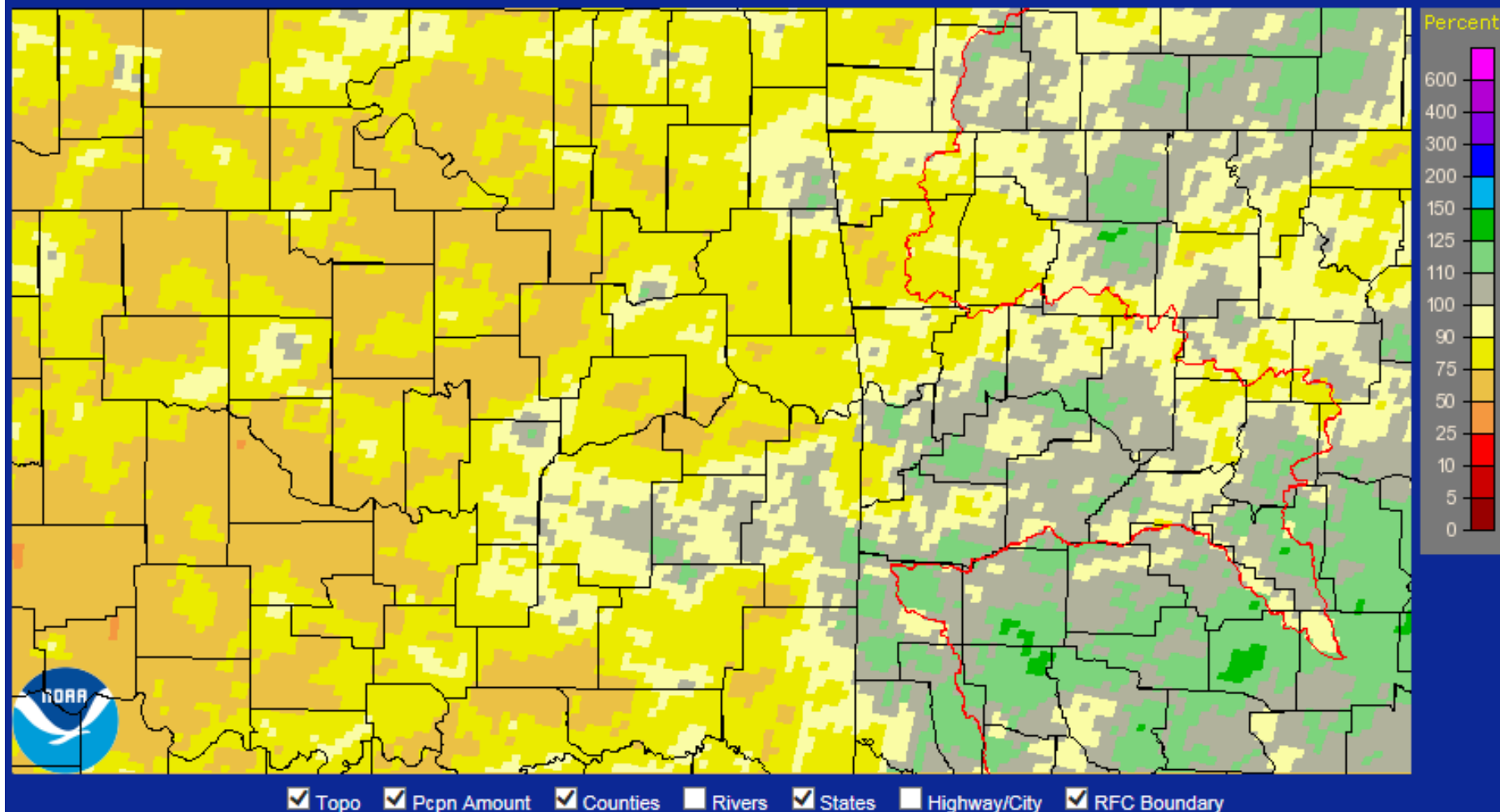


# Arkansas Red Basin River Forecast Center

## Year to Date Percent of Normal Precipitation



Tulsa, OK (TSA): Current Year to Date Percent of Normal Precipitation  
Valid at 10/23/2014 1200 UTC - Created 10/24/14 0:16 UTC





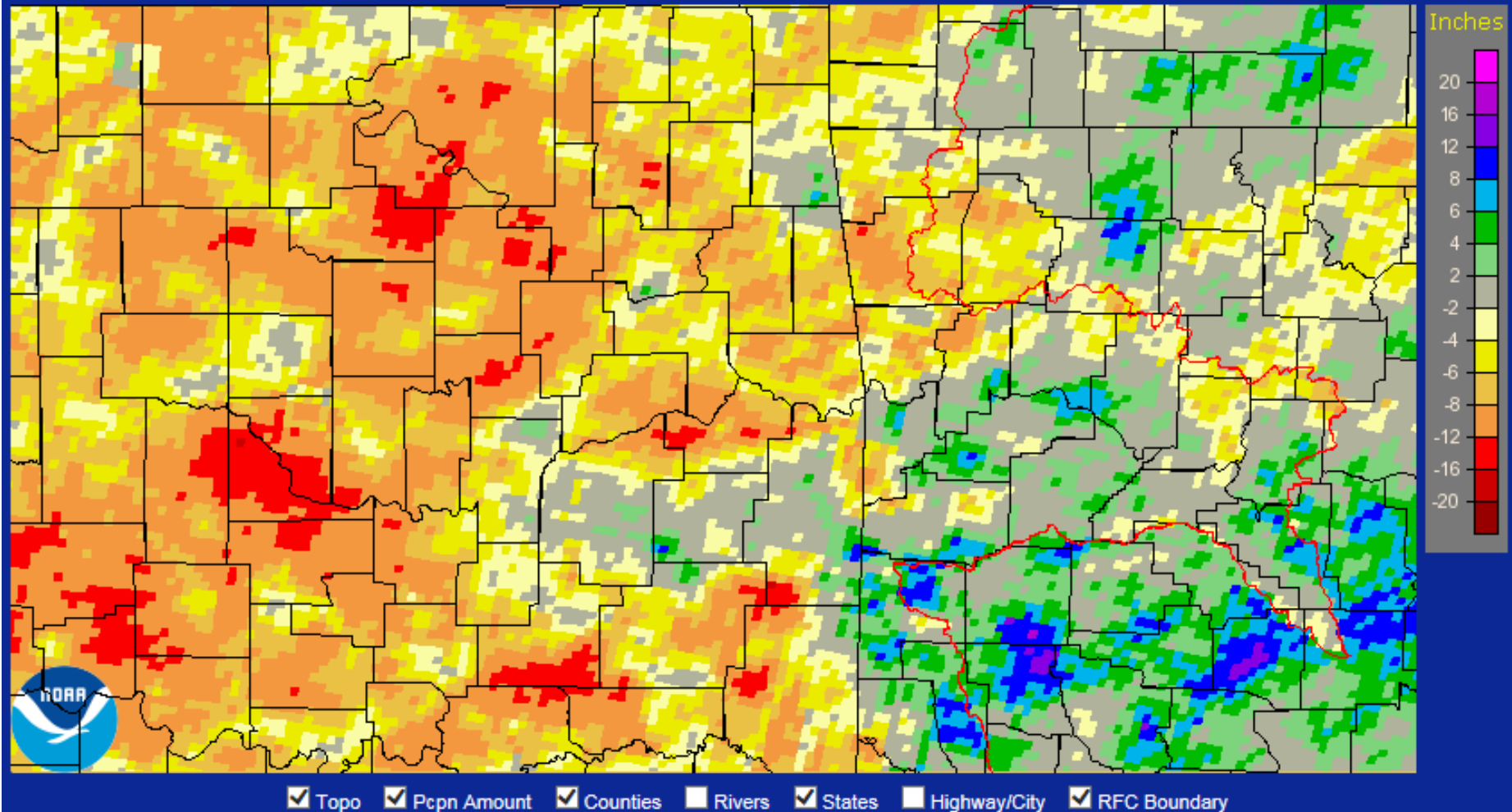


# Arkansas Red Basin River Forecast Center

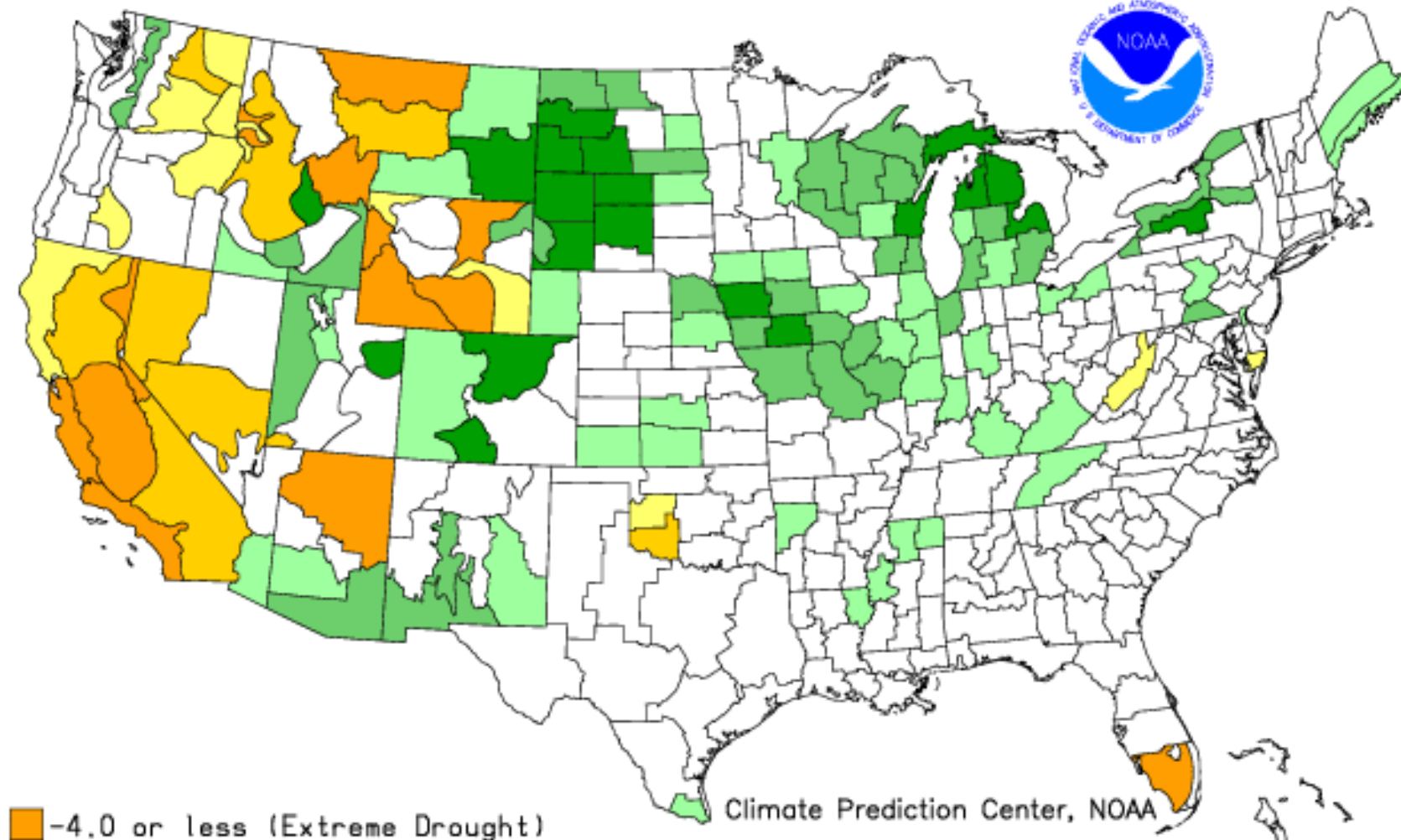
## Year to Date Departure from Normal Precipitation (-8" to -12")



Tulsa, OK (TSA): Current Year to Date Departure from Normal Precipitation  
Valid at 10/23/2014 1200 UTC - Created 10/24/14 0:15 UTC



Drought Severity Index by Division  
Weekly Value for Period Ending OCT 18, 2014  
Long Term Palmer



Climate Prediction Center, NOAA

- |                                   |                                      |
|-----------------------------------|--------------------------------------|
| ■ -4.0 or less (Extreme Drought)  | ■ +2.0 to +2.9 (Unusual Moist Spell) |
| ■ -3.0 to -3.9 (Severe Drought)   | ■ +3.0 to +3.9 (Very Moist Spell)    |
| ■ -2.0 to -2.9 (Moderate Drought) | ■ +4.0 and above (Extremely Moist)   |
| ■ -1.9 to +1.9 (Near Normal)      |                                      |

# U.S. Drought Monitor

## Oklahoma

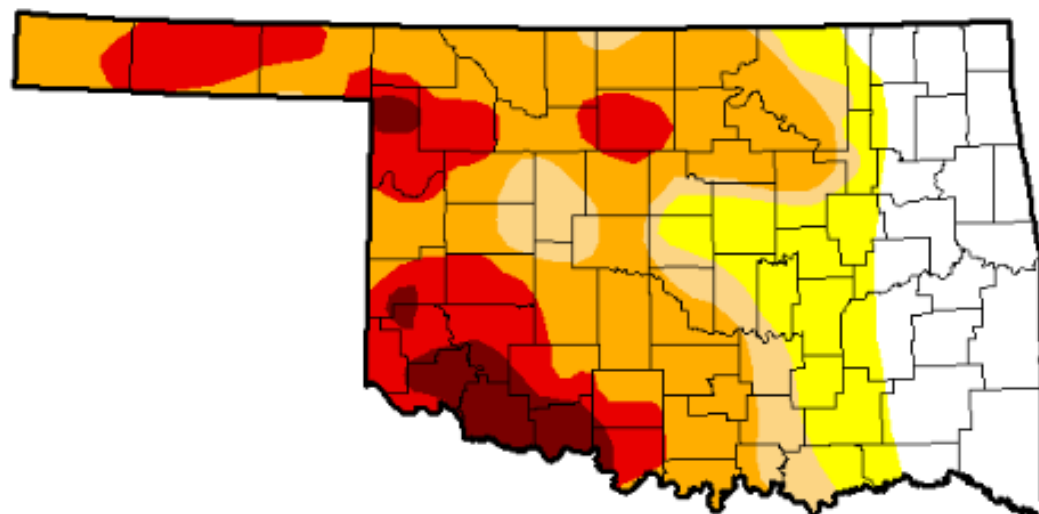
**October 14, 2014**

(Released Thursday, Oct. 16, 2014)

Valid 8 a.m. EDT

*Drought Conditions (Percent Area)*

	None	D0-D4	D0-D4	D2-D4	D3-D4	D4
<b>Current</b>	22.08	77.92	64.49	55.44	20.87	4.84
<b>Last Week</b> 10/7/2014	8.55	91.45	73.44	58.20	21.00	4.84
<b>3 Months Ago</b> 7/15/2014	9.86	90.14	79.57	62.93	29.37	6.43
<b>Start of Calendar Year</b> 1/20/2013	50.84	49.16	38.17	18.99	4.84	2.40
<b>Start of Water Year</b> 9/30/2013	8.55	91.45	73.31	58.13	20.92	4.64
<b>One Year Ago</b> 10/15/2013	41.83	58.17	36.85	14.90	4.42	1.45



### Intensity:



*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.*

### **Author:**

Mark Svoboda

National Drought Mitigation Center



<http://droughtmonitor.unl.edu/>

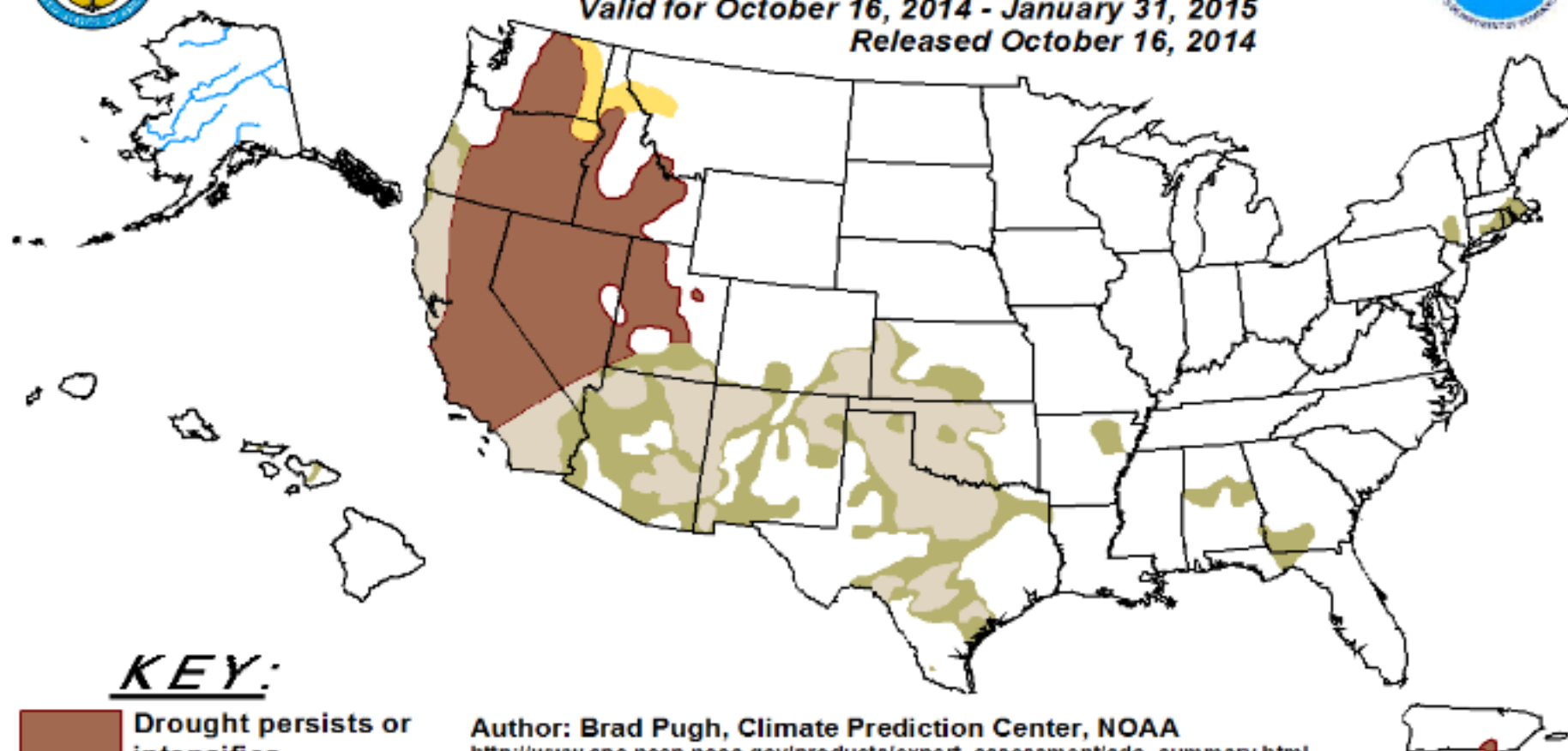





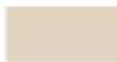


# U.S. Seasonal Drought Outlook

## Drought Tendency During the Valid Period

Valid for October 16, 2014 - January 31, 2015  
Released October 16, 2014



### KEY:

-  Drought persists or intensifies
-  Drought remains but improves
-  Drought removal likely
-  Drought development likely

Author: Brad Pugh, Climate Prediction Center, NOAA

[http://www.cpc.ncep.noaa.gov/products/expert\\_assessment/sdo\\_summary.html](http://www.cpc.ncep.noaa.gov/products/expert_assessment/sdo_summary.html)

Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4 Intensity). For weekly drought updates, see the latest U.S. Drought Monitor.

NOTE: The tan area areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period although drought will remain. The Green areas imply drought removal by the end of the period (D0 or none)



## Slightly Warm Sea Surface Temps

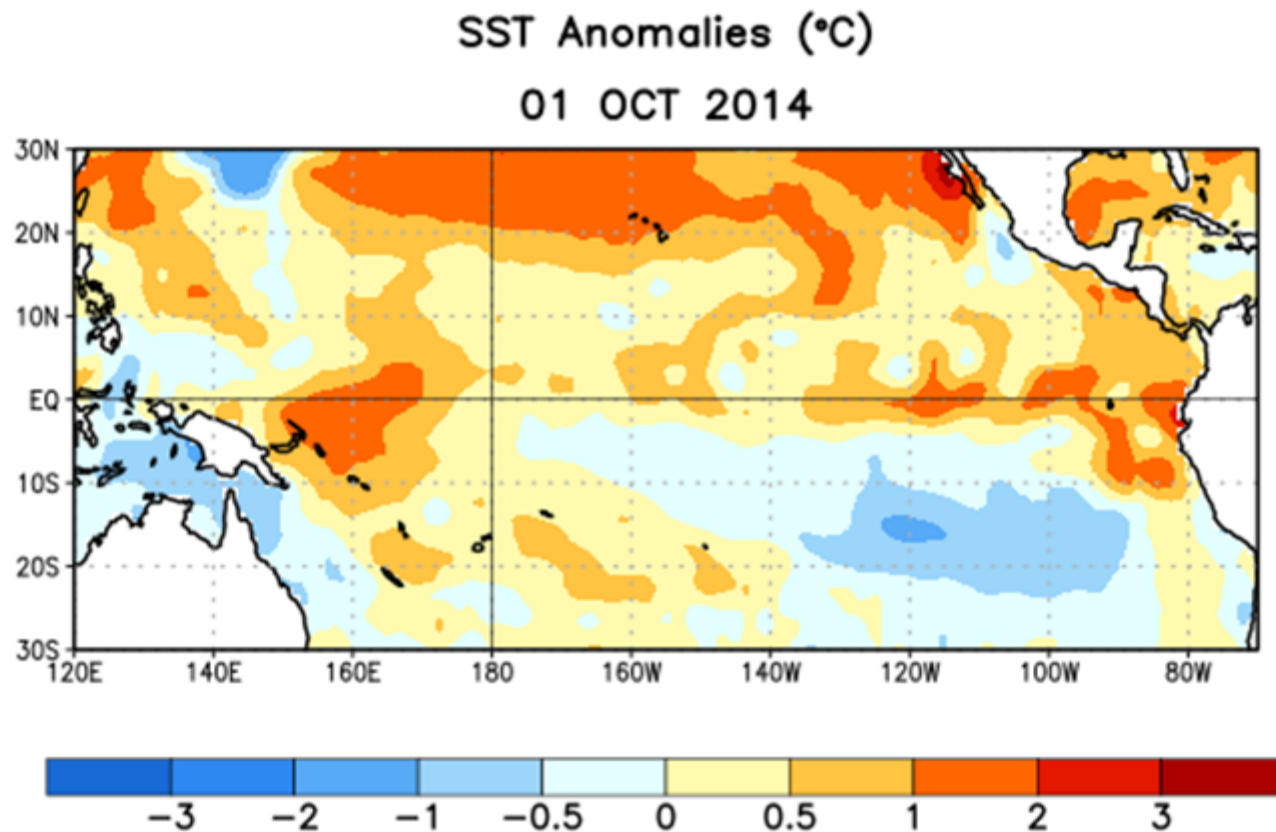
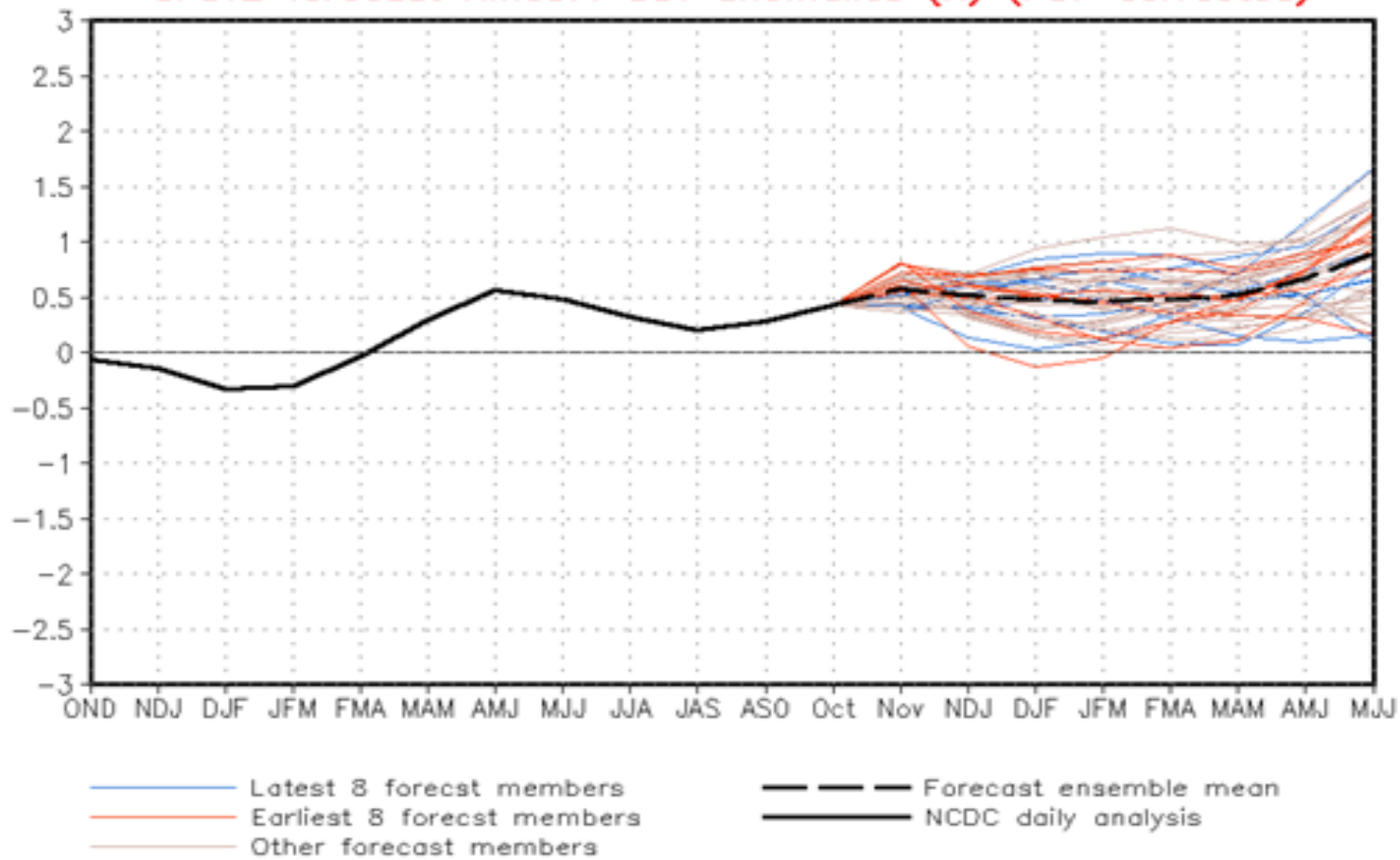


Figure 1. Average sea surface temperature (SST) anomalies (°C) for the week centered on 1 October 2014. Anomalies are computed with respect to the 1981-2010 base period weekly means.



**The CFS.v2 ensemble mean (black dashed line) predicts a weak El Niño starting during November and lasting through mid 2015.**

**CFSv2 forecast Nino3.4 SST anomalies (K) (PDF corrected)**



(Model bias correct base period: 1999–2010; Climatology base period: 1982–2010)



## Mid-Oct 2014 Plume of Model ENSO Predictions

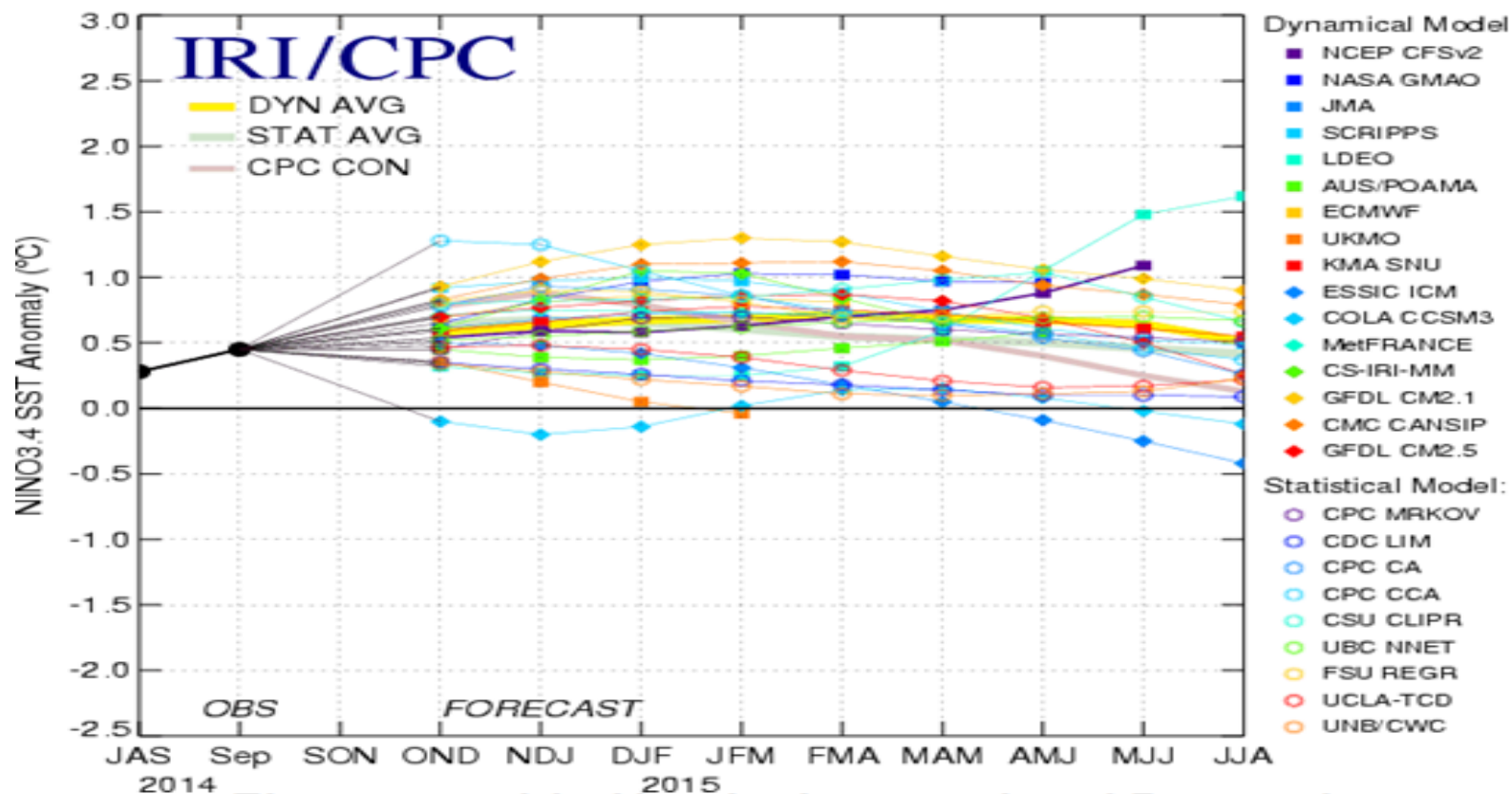
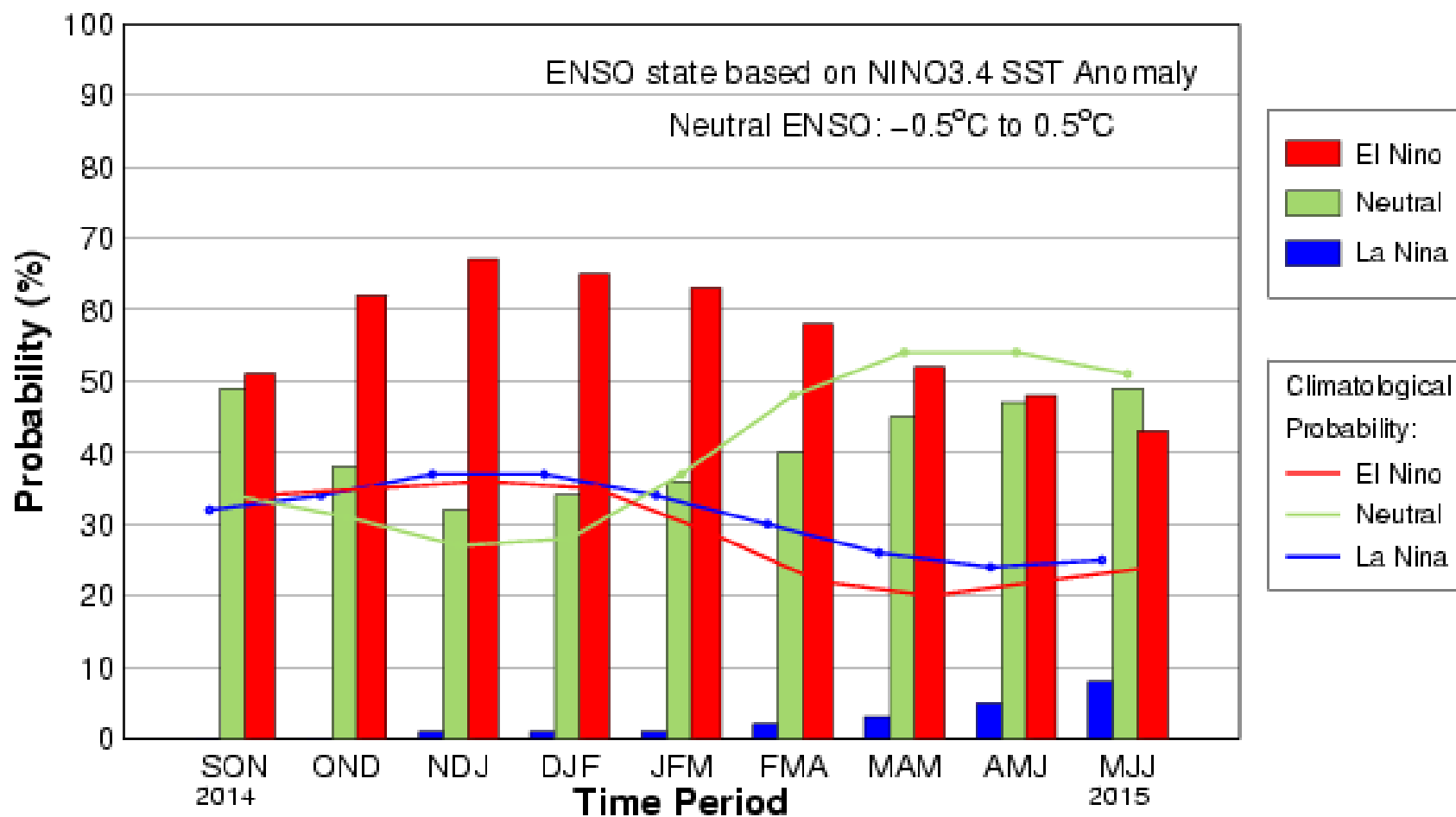


Figure provided by the International Research Institute (IRI) for Climate and Society (updated 16 October 2014).



## Early-Oct CPC/IRI Consensus Probabilistic ENSO Forecast





# EL NIÑO/SOUTHERN OSCILLATION (ENSO) DIAGNOSTIC DISCUSSION

issued by

CLIMATE PREDICTION CENTER/NCEP/NWS  
and the International Research Institute for Climate and Society  
9 October 2014

ENSO Alert System Status: **El Niño Watch**

**Synopsis:** El Niño is favored to begin in the next 1-2 months and last into the Northern Hemisphere spring 2015.

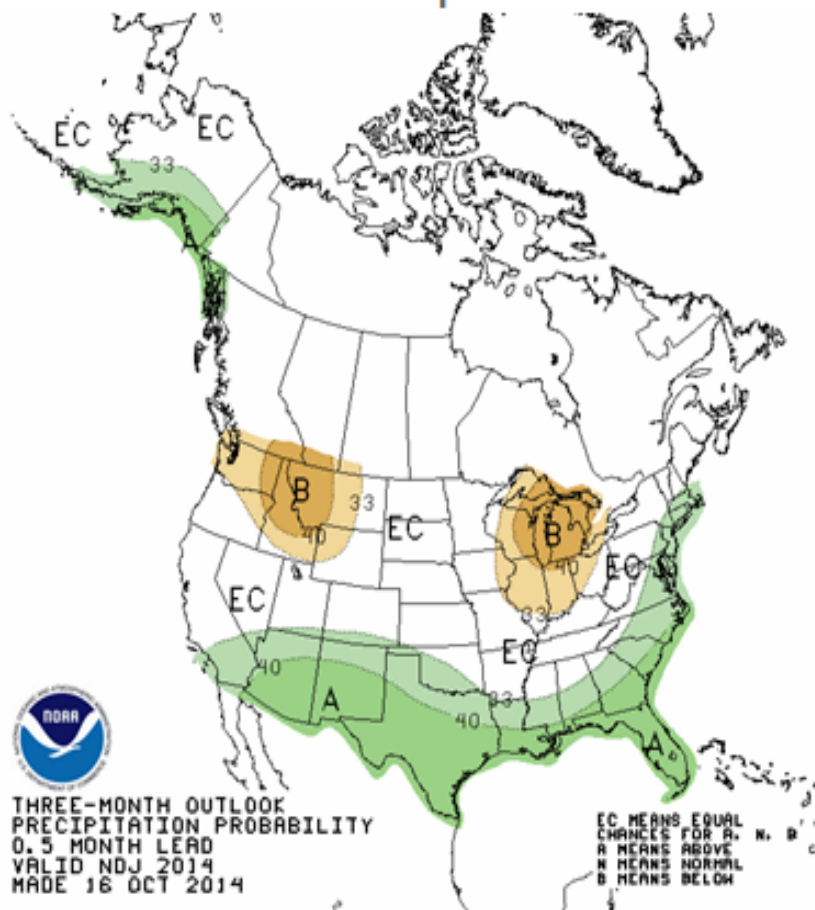
During September 2014, above-average sea surface temperatures (SST) continued across much of the equatorial Pacific (Fig. 1). The weekly Niño indices were relatively unchanged from the beginning of the month, with values ranging from +0.3°C (Niño-3.4) to +1.1°C (Niño-1+2) at the end of the month (Fig. 2). The change in subsurface heat content anomalies (averaged between 180°-100°W) was also minimal (Fig. 3) due to the persistence of above-average temperatures at depth across the central and eastern Pacific (Fig. 4). Equatorial low-level winds were largely near average for the month, though brief periods of westerly wind anomalies continue to arise. Upper-level winds were also close to average for the month. The Southern Oscillation Index has remained negative, and rainfall was near average around the Date Line, with a mix of positive and negative anomalies over Indonesia and Papua New Guinea (Fig. 5). The lack of coherent atmospheric and oceanic features indicates the continuation of ENSO-neutral.

Most models predict El Niño to develop during October-December 2014 and to continue into early 2015 (Fig. 6). The consensus of forecasters indicates a 2-in-3 chance of El Niño during the November 2014 - January 2015 season. This El Niño will likely remain weak (3-month values of the Niño-3.4 index between 0.5°C and 0.9°C) throughout its duration. In summary, El Niño is favored to begin in the next 1-2 months and last into the Northern Hemisphere spring 2015 (click [CPC/IRI consensus forecast](#) for the chance of each outcome).

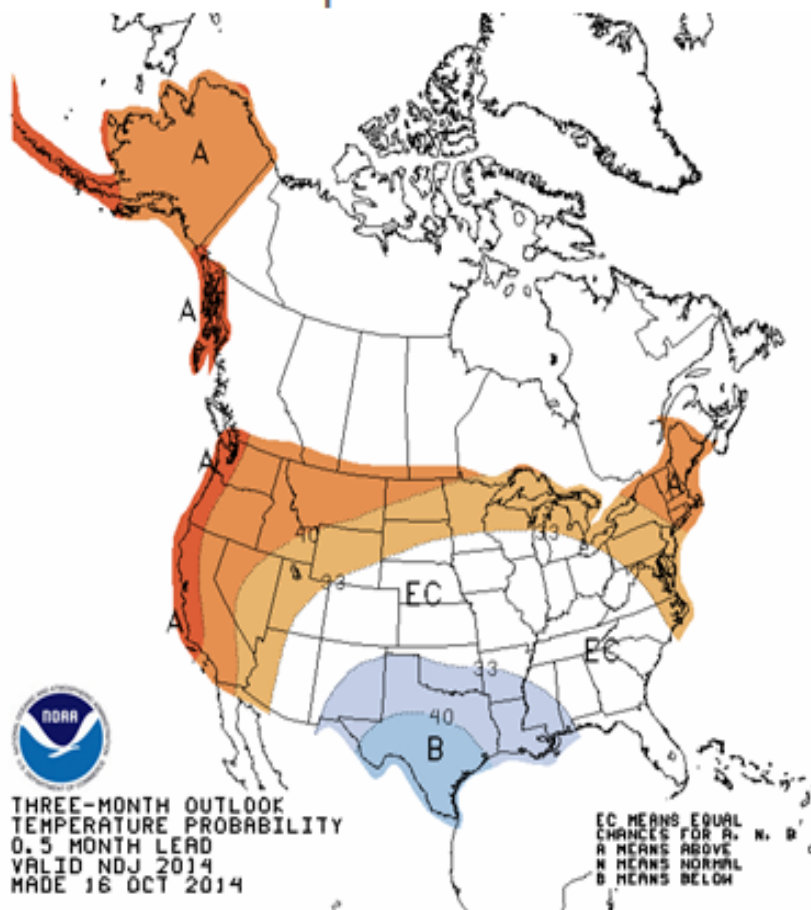
This discussion is a consolidated effort of the National Oceanic and Atmospheric Administration (NOAA), NOAA's National Weather Service, and their funded institutions. Oceanic and atmospheric conditions are updated weekly on the Climate Prediction Center web site ([El Niño/La Niña Current Conditions and Expert Discussions](#)). Forecasts are also updated monthly in the [Forecast Forum](#) of CPC's Climate Diagnostics Bulletin. Additional perspectives and analysis are also available in an [ENSO blog](#). The next ENSO Diagnostics Discussion is scheduled for 6 November 2014. To receive an e-mail notification when the monthly ENSO Diagnostic Discussions are released, please send an e-mail message to: [ncep.list.ens-update@noaa.gov](mailto:ncep.list.ens-update@noaa.gov).

# Climate Prediction Center Three Month Precipitation/Temperature Outlooks

## Precipitation



## Temperature





# ABRFC website: [www.weather.gov/abrfc](http://www.weather.gov/abrfc)

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**Arkansas-Red Basin**

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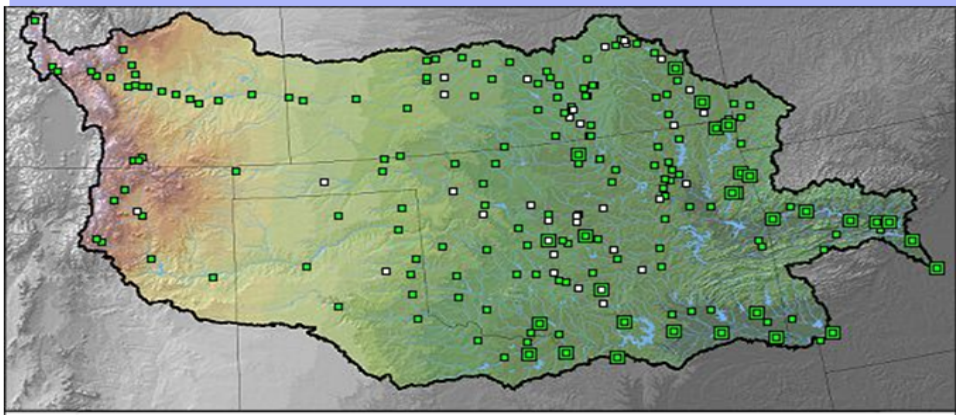
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No Flooding Occurring or Forecast

Observed/Forecast River Conditions Observed Precipitation Forecast Precipitation Gridded Flash Flood Guidance



National Weather Service - ABRFC - Tulsa OK  
Issued at 01:15 PM CDT Tue Sep 06, 2011

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# ABRFC website:

Drought Information - Windows Internet Explorer

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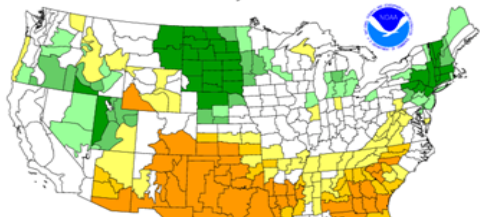
**ABRFC Drought Briefing** (updated during drought periods)

**Long Term Precipitation (and Percent of Normal) from the ABRFC**

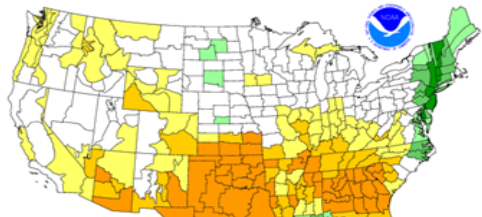
Last 30 Days		
<a href="#">Observed</a>	<a href="#">Normal</a>	<a href="#">Percent of Normal</a>
Last 90 Days		
<a href="#">Observed</a>	<a href="#">Normal</a>	<a href="#">Percent of Normal</a>
Last 180 Days		
<a href="#">Observed</a>	<a href="#">Normal</a>	<a href="#">Percent of Normal</a>

**Graphic Drought Information from the Climate Prediction Center**

Drought Severity Index by Division  
Weekly Value for Period Ending SEP 3, 2011  
Long Term Palmer



Crop Moisture Index by Division  
Weekly Value for Period Ending SEP 3, 2011  
Short Term Need vs. Available Water in a Shallow Soil Profile




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# ABRFC website:

www.weather.gov/abrfc



## National Weather Service River Forecast Center

# Arkansas-Red Basin

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### ABRFC Drought Briefing(03/06/2014)

.....Drought expanding again across much of the region.....

Although a few storms brought significant snowfall across parts of Colorado and Kansas, much of the basin has been relatively dry during the past several months. Precipitation has been much below normal across much of the region during the Winter. After some good rainfall put a big dent in the ongoing drought in the late Summer and Fall of 2013, the recent dryness started the cycle of expanding drought all over again.

[Figure 1](#) shows the past 30 days of precipitation across the ABRFC area. The heaviest precipitation was in the highest elevations of Colorado and in Arkansas, which is to be expected during the winter. Relatively heavy precipitation also occurred across much of Central Kansas, as several systems brought significant snowfall to that area. Most of the other areas within our basin saw precipitation during the past 30 days, but not close to what is considered seasonal. [Figure 2](#) shows the departure from normal precipitation across the ABRFC at the 30, 60, 90, and 180 day timescales. This animation shows the tremendous swings in precipitation that are typical to this part of the country. At 30 days, much of the basin is dry to very dry, except across Central Kansas. At 60 and 90 days, the precipitation distribution across much of the basin is similar to that of 30 days. But, the 180 day image shows much of the basin was generally near normal. There is a tremendous difference between the 180 day and 90 day images across Eastern New Mexico and Colorado that can be attributed to the huge rainfall that area received in September. Other than that brief period, most of that area has been extremely dry compared to normal. [Figure 3](#) shows a six week animation of the drought designations from the U.S. Drought Monitor. The scattered areas of the most severe drought in the western areas of the ABRFC continue are relatively persistent. Extreme Drought (D2) expanded across the Texas Panhandle, and Moderate Drought (D1) expanded across much of Oklahoma north of the I-44 corridor into Southeast Kansas.

[Figure 4](#) shows the latest Drought Severity Index map based on the Long Term Palmer Index from the Climate Prediction Center (CPC). Since much of the recent dryness doesn't show up in this long-term drought product, much of the basin appears to be near normal. However, the longterm dryness across Northwest Texas and Southwest Oklahoma shows up very well. If our dry period continues, expect the dryness to expand in the image in the coming weeks. The CPC also generates the U.S. Seasonal Drought Outlook ([Figure 5](#)). Unfortunately, drought conditions are forecast to persist or worsen across much of the drought areas of the basin into Spring. The CPC's 3-month Precipitation Outlook is shown in [Figure 6](#). The outlook calls for equal chances of near, above, or below normal precipitation across much the ABRFC for the next 3 months. On the Arkansas River, all reservoirs in eastern Oklahoma are near their normal pool elevations, although Eufaula is down to 93% of normal ([Figure 7](#)). A few reservoirs in the Red River Basin ([Figure 8](#)) still have below normal pool elevations, with the largest lake in the system (Denison) significantly below normal. This is expected, since much of the inflow area for this lake has been in the grips of a multi-year drought. Real-time river gage data from the



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## **Drought Briefing**

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